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A Study on Effectiveness of Inter Organization Trust in E Business

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Abstract

E-business is the sharing of business information, maintaining business relationships, and conducting business transactions by means of telecommunications networks. E-Business applications facilitate communication and information exchanges between organizations, thereby enabling mass manufacturing, production, and customization to occur. E-business is changing the shape of competition, the dynamics of trading partner relationships, and the speed of fulfillment.

A trading partner is considered to be an organization which engages in business-to-business e-commerce. Trading partners can play various roles of suppliers, merchants, brokers or customers. For trading partners to participate in e-commerce, they need to adopt, integrate, and use e-commerce technologies and applications. They interact with one another to form Inter-organizational relationships (IORs). The terms trading partner trust and inter-organizational trust are used interchangeably.

Key Words: IOR, EDI, IT, TCE

Objectives of the Study

This study has the following objectives as listed below:

- To highlight inter organizational trust in trading partner and need for inter organization system
- To enumerate factors affecting inter organization trust and compare inter organization system with inter organization trust.

Introduction

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Background of Inter-organizational Trust (Trading Partner Trust) in E-Business

E-Business involves the use of computers and telecommunications in routine business relationships. It mostly affects the organizations' operations and daily relationships with their suppliers, customers, banks, insurers, distributors, and other trading partners. The close coupling between buyers and suppliers (sellers) forms inter- organizational relationships. Virtually every business today is stretched to the limit, while attempting to maintain viability and profitability in the face of unparalleled uncertainty and change. E-business introduces an element of additional complexity into inter-organizational relationships (IOR).

The proliferation of advanced e-business technologies and the lack of universal standards and policies to guide trading partners have left most organizations adopting e-business while lacking the necessary knowledge and expertise to do so. Trading partners may not fully understand the potential use of e-business technology and are implementing e-business systems for the sole purpose of gaining competitive advantage, without properly considering the trustworthiness of their partners or security consequences. Complexity in operating e-commerce applications has led to uncertainties in the e-business environment.

The spatial and temporal separation between trading partners by the Internet generates an implicit uncertainty around online transactions. Uncertainties inherent in the current e- commerce environment give rise to a lack of trust in e-commerce relationships, thereby creating barriers to trade identify the following two types of uncertainties: uncertainty regarding unknown future events and uncertainty regarding trading partners' responses to future events. Uncertainties reduce confidence both in the reliability of business-to-business transactions transmitted electronically, more importantly, in the trading parties themselves.

On the other hand trust among trading partners encourage information sharing and opens communication. Interdependencies between organizations arise from sharing e-commerce and associated technologies. Previous research in Electronic Data Interchange (EDI) adoption suggests that these interdependencies can lead to an imbalance of power between smaller suppliers and their more powerful buyers. It is in this environment of dual uncertainty that trust becomes important for business-to- business e-business.

Many businesses perceive that e-business transactions are insecure and unreliable. Despite the assurances of technological security mechanisms (such as encryption and authorization mechanisms, digital signatures, and certification authorities), trading partners in business-to-business e-business do not seem to trust the personnel involved in the transactions. Electronic access to information introduces vulnerabilities (such as imbalance of power due to opportunistic behaviors) in inter-organizational relationships. To manage these uncertainties and ensure future opportunities for improving coordination, organizations will need to build trust relationships with their trading partners. According to Keen (1999), trust among trading partners is the currency of e-business "We are moving from an IT economy to a trust economy". Similarly, the prominence of trust in e-business has recently been widely touted by practitioners and academicians alike, Despite the growth of e-commerce for businesses, only limited research exists that explains how relationships evolve between organizations participating in e-commerce, if trading partner trust existed in and was relevant to e-business. Not much was known, recognized, and understood about the phenomenon of trust. Furthermore, the focus in the early stages was on technology and not trusts.

The Need for Inter-organizational trust

In spite of the efficiency and coordination benefits documented in both research literature and the trade press, e- business growth was relatively slow when this study was initiated in 1997. Internet e-business growth was slower within the Asia-Pacific region as compared to the United States. This was due to perceived risks in security of business-to- business transactions and a lack of trust among trading partners. Fears about electronic fraud and lack of privacy hampered Internet. Trust has been identified as one of the central constructs in relationship marketing theory. The past decade has seen a paradigm shift toward relational marketing which encompasses relational contracting, working partnerships, and strategic alliances. Relational marketing includes activities directed toward establishing, developing, and maintaining successful relational exchanges. Relational exchanges include supplier partnerships (goods suppliers, just-in-time, and total quality management), lateral partnerships (competitors, technology alliances, nonprofit organizations, government), buyer partnerships (ultimate customers and intermediate customers), and internal partnerships (functional departments, employees, and business units).

Social relations rather than institutional arrangements or generalized morality, are mainly responsible for the product of trust in economic life. As the duration and intensity of interactions between trading partners increase, bonds will develop. "The economic success of a nation as well as its ability to compete is conditioned by the level of trust inherent in the society". Effective competition in the global economy demands trustworthy trading partners. While it is important for a supplier to gain the trust of a distributor, it is equally imperative that distributors Trust is required to achieve cooperation and commitment because the existence of trust encourages trading partners to:

- work at preserving relationship investments by cooperating with exchange partners;
- resist attractive short-term alternatives in favor of expected long-term benefits of staying with existing trading partner relationships; and
- View potentially high-risk actions as carefully as possible as commitment and trust exists in trading partners. Trust produces outcomes that promote efficiency, productivity, and effectiveness (Morgan and Hunt, 1994). In short, commitment and trust lead directly to cooperative behaviors for relationship marketing success.

Power and trust in EDI adoption that trust played a very important role in EDI adoption for two main reasons:

- Trust encourages organizations to make investments necessary for electronic information exchange, including the technical investments needed for supporting greater information exchange across organizational boundaries. This, in turn, contributes to improved inter-organizational coordination and information sharing in e-commerce integration. It is important to reinforce trust during the e-commerce implementation process, as trading partners are encouraged and motivated to make investments in computer integration. Over time there will be an increase in e-commerce performance and information sharing.
- Trust discourages opportunistic behaviors that would clearly reduce information sharing over time. Here, trust helps reduce a firm's probability of behaving in an opportunistic way, thus mitigating risks and reinforcing the opportunity to expand information sharing over time.
- This study focuses on inter-organizational trust within uni and bi-directional dyads in

business-to-business e- commerce participation and considers not only economic benefits and risks, but also behavioral characteristics (as in trading partner trust benefits and risks).

Inter-Organizational System to Inter-organizational Trust

E-commerce technologies and Information Technology (IT) have become the main tools for implementing business processes between organizations. An Inter-Organizational-Systems (IOS) refers to "an automated information system shared by two or more companies" implemented for efficient exchange of business transaction. Inter-organizational-systems facilitate the exchange of information electronically across organizational boundaries and provide both processing capabilities and communication links. The potential for inter- organizational-systems to serve as strategic information systems has been extensively discussed in academic journals. Inter-organizational-systems facilitate the exchange of business transactions among trading partners, as they improve the speed, ease, and quality of information transfer. Through inter-organizational-systems, buyers and sellers arrange routine exchanges of business transactions sometimes without direct negotiations. Because information is exchanged over telecommunications networks using prearranged formats, there is minimal need for telephone calls, paper documents, or business correspondence to carry out the transactions. Value-added-networks, Internet-based EDI systems, intranets, and extranet systems are examples of inter-organizational-systems. IOSs are a direct result of the growing desire to interconnect business partners for the purpose of reducing costs by streamlining processes, collapsing cycle time, and eliminating inefficiencies associated with paper processing.

Trust can be placed by one individual (trading partner) or a group of individuals (trading partners) in an organization. Moreover, trading partners in an organization may share common orientation towards trading partners in another organization. Inter-organizational-systems provide a basis for trading partners to coordinate and share information which enhances competitive advantage. Consistent trading partner interactions between organizations lead to inter-organizational trust. Organizational trust can be more transferable and can affect trading partners' responsibilities (Dow et al., inter-organizational trust as a short hand for "two sets of individuals each of which is trusting the organization of which the others are members." In other words, an organization might rely on a particular supplier because of his/her proven technical competence and reputation for dealing fairly. However, the employees will be ones who actually trust the supplier and determine whether or not the supplier is trustworthy. The impact of supplier firm and salesperson trust on a buying firm's current supplier choice, Thus inter-organizational-relationships from this perspective lead to inter-organizational trust because they describe the extent of employees trust toward their trading partner's organization), Inter-organizational trust (IOT) as "the confidence of an organization in the reliability of other organizations regarding a given set of outcomes or events". Inter-organizational trust as "the confidence in the reliability of two organizations in a possibly risky situation that all trading partners involved in the action will act competently and dutifully." Thus, inter-organizational-systems implemented for the sole purpose of e-commerce contributes to the development of inter-organizational-relationships. Repeated daily interactions in inter-organizational-relationships lead to the incremental development of inter-organizational trust.

Conceptual Model of Inter-organizational trust in E-Business Participation

The conceptual model presents a model of the effect of trading partner trust in e-business participation. The model was derived from the importance of trading partner trust and from theories in multiple disciplines including marketing, management, sociology, information systems and e-commerce. Theoretical perspectives contributing to the development of the conceptual model include trust in business relationships, trust and security-based mechanisms in e-business, inter-organizational relationships (IORs), transaction-cost-economics (TCE), and resource-dependency theories. These theoretical perspectives yielded an understanding of the potential strengths and weaknesses of trading partner relationships in e-commerce participation. Moreover, they also provided a unique emphasis by not only considering the organizational, technological, economic, and socio-political perspectives of IORs, but also the behavioral dimensions relating to interactions between trading partners within a bi-directional-dyad.

Factors Affecting Inter Organization Trust

- **Reduced Costs**

  Past researchers have noted that the Internet is an inexpensive, flexible, and efficient means for businesses to trade and communicate. The biggest advantage of Internet-based EDI over VAN is the flat pricing which is not dependent on the volume of information transferred. While EDI conducted via a VAN costs about $150 per hour, the same business conducted over the Internet only costs $1 per hour.

- **Flexibility**

  Information on products, prices, business, and services in electronic databases are available to registered trading partners anytime from anywhere in the world. Internet commerce achieves accessibility, availability, and universality because trading partners can interact with one another easily as information and operations take place.

- **Open Channels for Inter-organizational Relationship Development**

  E-commerce enables business processes, inter-organizational transactions and trades to take place because the Web technology infrastructure performs information storage, browsing, and retrieval needed for these processes and transactions. The interactive capabilities of Web-based electronic catalogs eliminate the need for physical storage and enable dynamic, efficient, and effective updates. Prices from different vendors can be compared more easily, thus establishing better communication between suppliers and customers.

Trust and Security Concerns

Concerns include the expandability of the Internet; and its ability to meet the needs and expectations of all businesses. Even as the Internet becomes more secure, trading partners still do not feel safe.

Security is but one barrier, the real underlying factor is insufficient trust in the reliability of Internet-based commerce to absorb the rapid increase in use. Despite the opportunities of Internet commerce, many businesses are reluctant to go online because they perceive the Internet as an intrinsically insecure environment.

- **Lack of Top Management Support**

  With poor internal management and a lack of top level management commitment, implementing e-commerce even with the most advanced products becomes challenging. If management is unwilling to provide adequate financial resources, poor business practices might follow. For example, without full support an organization might neglect the need for a paper audit trail that would ensure the reliability of electronic certification and business continuity. Successful e-commerce adoption requires full top-level commitment, as many potential adopters are ignorant about the potential and use of e-commerce technologies and their potential benefits and risks.

- **High Costs of Implementing E Commerce**

  Startup costs for implementing e-commerce applications can be high. These include connection costs, hardware, software, set up, and maintenance. Implementation costs may also include conducting an initial search costs, costs of writing contracts, and paying staff to update and maintain electronic databases. In addition, contractual, transmission, and coordination costs are also incurred. Technology and infrastructure costs increase, as organizations are required to implement compatible systems to receive messages from other trading partners.

Organizations need to first develop the necessary IT infrastructure applications, acquire the technical implementation expertise, and invest in training. They must also acquire e-commerce translation and mapping software, and contract with a communication medium or company. Thus, high costs may create initial barriers to e-commerce participation.

- **Lack of Standards and Policies**

Extranets operate in environments that lack standards and best known practices, which can lead to potential compromises in network controls, maintenance, data ownership, internal and external security, and permissions. Current methods of standardization for structuring data exchanged among extranet applications totally ignore how e-commerce applications were designed to operate. In a survey of the Information Technology American Association (ITAA) Industry Pulse Sabo, found that barriers to e- commerce adoption included trust, budget constraints, and public policy regulations. Most organizations do not know what policies to set and many do not even have a complete security policy in place. Lack of consistent government policies, laws, and practices may impact participation in e-commerce. Lack of Technical Skills, Knowledge, and Expertise,

Internet-based e-commerce was in its formative stages in 1997, in Australia and New Zealand while the U.S. and Europe were two to three years ahead. Many trading partners lacked the skills, resources, and technical know-how to implement policies and strategies for secure e-commerce. One of the major barriers to successful EDI adoption was limited awareness of promotional activities in EDI use. This reasoning was consistent with previous empirical research that suggested that the lack of technical knowledge, expertise, and resources hindered IT use and e-commerce participation.

- **E-commerce Uncertainties**

The proliferation of e-commerce applications have left most trading partners uncertain of e-commerce operations and unaware of the full potential of e-commerce technology. Uncertainties may arise when trading partners encounter barriers in communication (such as incompatible e-commerce systems, or lack of uniform standards) that may lead to conflicts. There are three types of vulnerability: task, environment, and partnership. Similarly, such matters inside an organization were seen as roadblock even when EDI was first adopted. Although, risks are inevitable in every trading partner relationships, trust reduces the expectations of opportunistic behavior, and reduces perceptions of risks.

Inter-organizational trust from organizational, Economic and Political Perspectives

Inter organization trust focuses only on the technological perspective, but also on the behavioral, economical, and political perspectives. Inter-organizational trust within bi-directional-dyads in e-commerce warrants interest in this topic. Although, many theories exist that are applicable to the diffusion of e-commerce technologies, inter-organizational-relationship theory (organizational theory), transaction-cost-economics theory (economic dimension), and resource-dependency theory (political dimension) were used to examine trust in business relationships because they focused on trust related behaviors in organizations.

1. **Inter-organizational-relationship Theory and Trust**

   Inter-organizational-relationship (IOR) theory focuses on reasons and conditions for forming relationships. These include socio-political, structural, behavioral, and procedural dimensions. Inter-organizational-relationships have been variously described as value-added partnerships derived from implementing information systems, inter- organizational information systems (IOS), and electronic integration. Inter-organizational-relationship theory considers situational, structural and procedural factors that are relevant for e-commerce participation.

   a) Situational factors describe reasons for forming inter-organizational relationships. These factors include resource necessity, procurement and allocation, political pressure, asymmetry or dependency, the legitimizing of current organizational operations, external efficiency opportunities, reciprocity, and resource predictability.

   b) Structural factors refer to procedures and governance mechanisms that control e-commerce transactions and exchanges between trading partners. Structural factors form formal institutional arrangements and governance mechanisms that prescribe an overall pattern of interactions in inter-organizational-relationships. Formalization of these interactions refers to the extent to which rules, procedures, instructions and communications are written. It examines the extent of exchange resources and information administered through formal written policies, procedures, and contracts. EDI adoption in smaller retailers and they found that intensity, formalization, and information quality were important in dyadic relationships. Information quality was seen in the integrity of e-commerce transactions (accuracy, timeliness, speed, and completeness of e-commerce transactions). This study argues that although centrality (i.e., the extent to which resources and information flows are dominated by one or a few trading partners) was not found to be important, this may not be completely true in the case of EDI automotive manufacturers. The automotive industry was characterized by centrality of industry standards and coercive power exercised by large buyers pressuring smaller suppliers to adopt EDI.

c) Procedural factors refer to the interactions and behaviors that arise from trading partner interdependencies. Interdependencies among trading partners may cause exchange behaviors such as, power, dependence, cooperation, conflict, and trust that affects the performance of inter-organizational-relationships. Inter-organizational-relationship theory contributes to a useful approach of analyzing causes and conditions for forming trading partner relationships in e-commerce participation. In particular, inter-organizational- relationships theory provides insights into e-commerce transactions, information flows, linkages, trading partner behaviors, interactions, and environmental factors. Inter-organizational-relationship theory has its limitations in that it fails to adequately distinguish between types of resources and organizations. The major limitation of previous studies in inter-organizational-relationships is that they simply extended or adapted the study across organizational levels without articulating which distinct role the study addresses.

b) Transaction Cost Economics Theory and Trust

Transaction-cost economics seeks to explain the economic rationale of alternative forms of organization, i.e., their relative efficiency transactions have highly uncertain outcomes, recur infrequently, and require unique or transaction-specific investment; they can be performed most efficiently within hierarchies. Trading partners normally negotiate and monitor trading partner agreements as legal contracts to protect themselves from opportunistic behaviors and risks. Transaction costs are affected by asset specificity, uncertainties, complexity of exchange, bounded rationality and behavioral factors such as opportunism.

It is possible to reduce transaction costs through a reputation for non-opportunistic behavior. While it is difficult to observe the difference between opportunistic versus cooperative behaviors, it is possible to select cooperative trading partners. Opportunistic actions within a single market may yield short- term benefits, but there is a long-term cost: the lack of trust that results might inhibit future acquisitions of cost- reducing and/or quality-enhancing assets. Trust is not purely an economic phenomenon that can be reduced to a calculation in cost/benefit terms.

Trust can also be found in social relationships because "reputation has an economic value" (Hill, 1990).

Transaction-cost-economics (TCE) contributes to an economic rationale understanding in the role of trading partner trust relationships. Agents in any principal-agent relationship are not to be trusted and that the risk of opportunism is high. Business managers often do act on the basis of trust but it is difficult to identify trustworthy agents. The concern is how to develop efficient safeguard strategies against the hazards of opportunism in the absence of uncertainty about the trading partner's trustworthiness. In addition, trust is an ongoing, market-oriented, economic calculation; its value is derived from results of creating and sustaining the relationship relative to the costs of maintaining or severing it. Hence, trust is critical, particularly when the economic value of trading partner relationships is in question. The limitation of transaction-cost-economics theory is that the traditional transaction cost approach ignores the role of inter-organizational-relations for the purpose of development and exchange of resources and competencies. TCE theory assumes opportunism as standard behavior. It ignores the crucial role that informal, socially embedded personal relationships have in producing stable relations of trust, obligation, and custom among formally independent organizations. Transaction-cost-economics does not make a universal claim that applies to all organizations, nor does it accurately predict what will happen in specific situations. In addition, transaction-cost-economics provides limited insights into the strategic choices of organizations, and their abilities to adopt particular technologies. It neglects both the political and other non-economic aspects of inter-organizational relationships.

c) Resource Dependency Theory and Trust

Resource dependency theory complements transaction-cost-economics theory by adding a process dimension concerned with economic decision-making. It includes the political behavioral aspects of inter-organizational dyads. Resource dependency theory or political economy explicitly recognizes the political dimensions of the dyad. Resource dependency theory is concerned with:

Resource dependency theory contributes to political economic dimensions because of its holistic approach. It explicitly addresses the whole relationship over time; its history, anticipated future, and economic, political, as well as structural and behavioral dimensions.

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